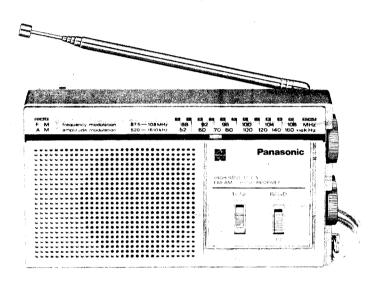
## Service Manual

**RF-081** 

FM/AM 2 BAND PORTABLE RADIO



#### MC-Service

#### **■ SPECIFICATIONS**

Frequency Range: FM87.5~108 MHz

AM 520~1610 kHz (577~186 m)

Intermediate Frequency: FM 10.7 MHz

AM 455 kHz

Sensitivity: FM  $2.5\mu V$  for 50 mW Output

AM  $60\mu V/m$  for 50 mW Output

Power Output: Batteries: 500 mW (DC Maximum) 6 V (Four "AA" Size Penlight Batteries)

National UM-3 or equivalent

Speaker: Dimensions: 6.5 cm (2-1/2") PM Dynamic Speaker

153 (Wide) $\times$ 84 (High) $\times$ 36 (Deep) mm

 $(6'' \times 3^{-5/16''} \times 1^{-7/16''})$ 

Weight: Impedance: 0.32 kg. (11 oz.) without batteries

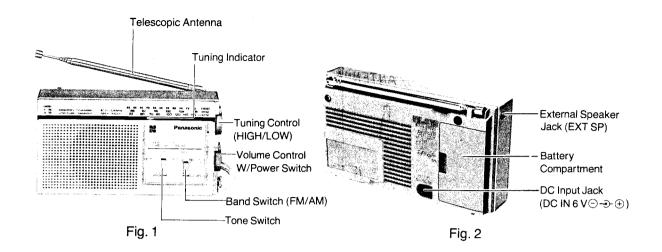
Speaker ......8Ω

Earphone Jack . . . . . . . . . . . . 8Ω

Specifications are subject to change without notice.



## LOCATION OF CONTROLS AND COMPONENTS



## **DISASSEMBLY INSTRUCTIONS**

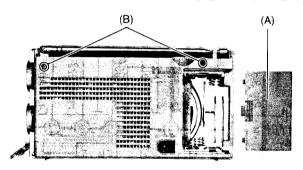


Fig. 3

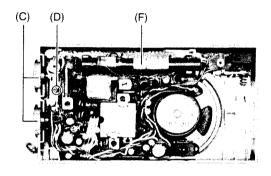


Fig. 4

DIAL THREADING

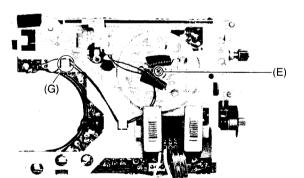
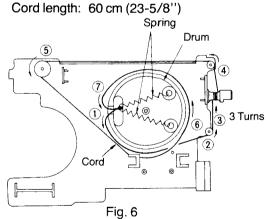
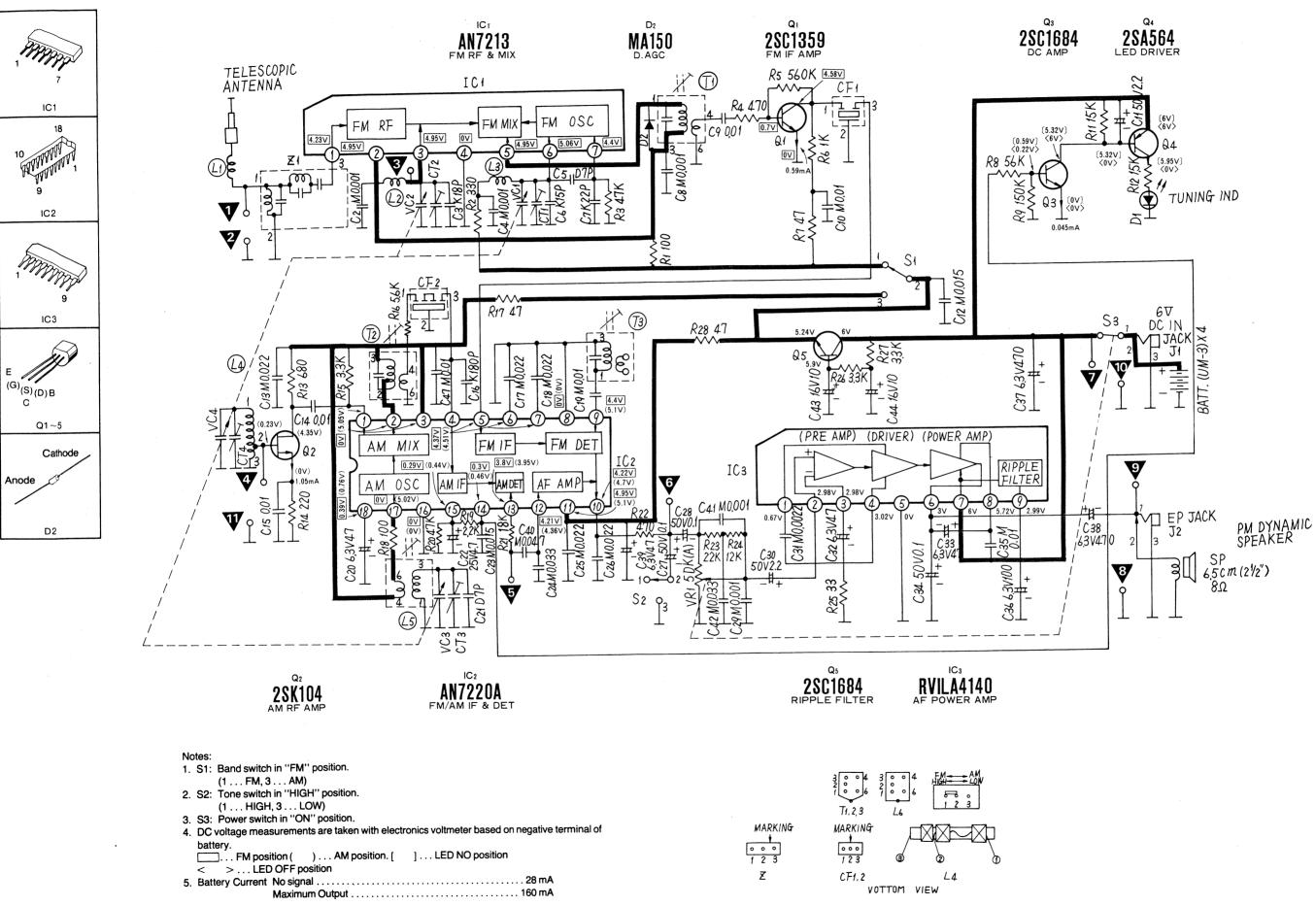


Fig. 5

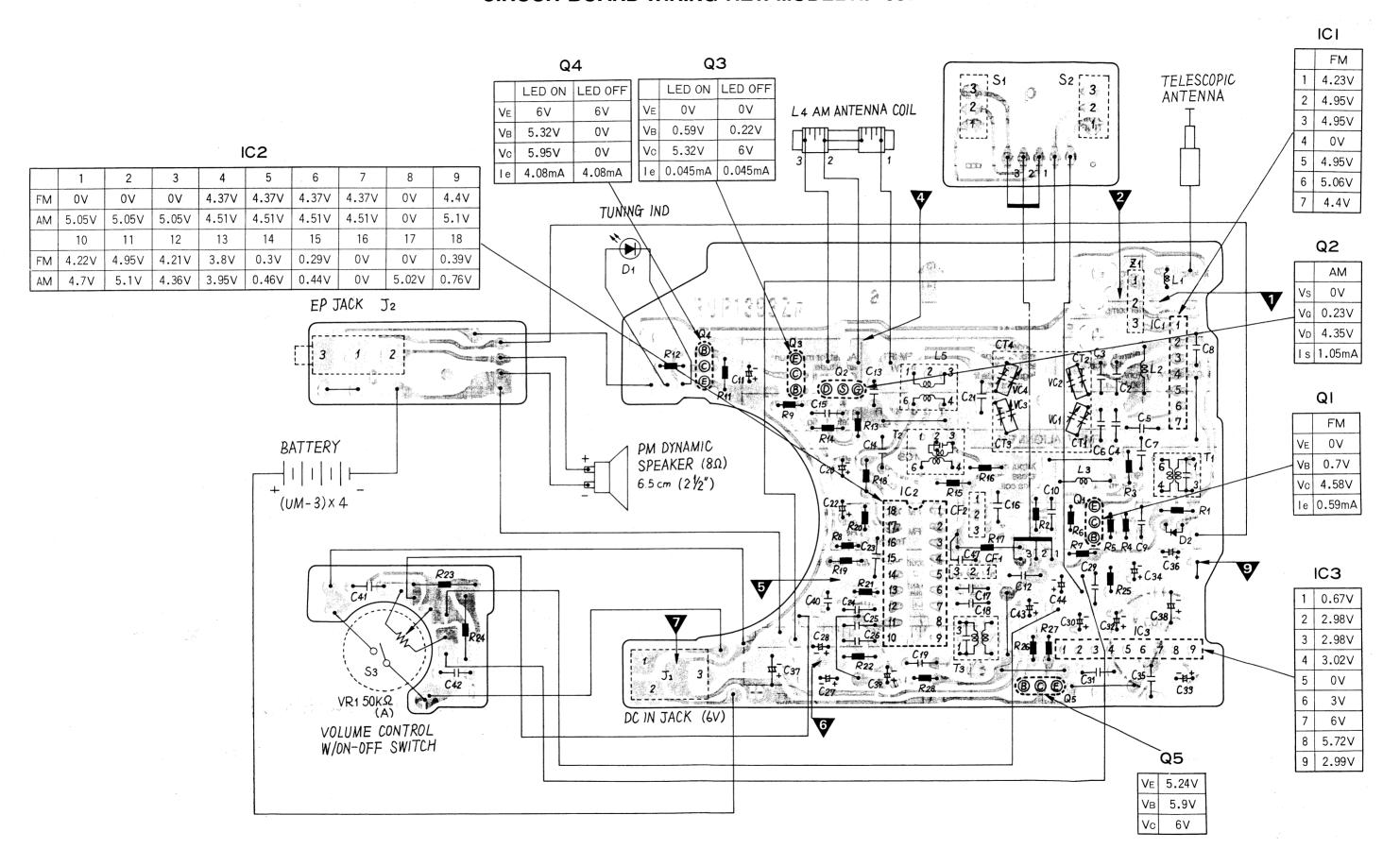


Procedure	To remove—.	Remove—.	Shown in Fig	
1	Oakia d	Battery Cover (A)×1	3	
2	Cabinet cover	Screw (2.6×2) (B)×2	3	
3	- Chassis	Knob (C)×2	4	
4		Screw (2.6×12) (D)×1	4	
5	Circuit Board	Screw (1.7×4)(E)×1	5	
6		Core Antenna	4	
7		Remove the lead wire from catch(G)×1	5	

## **SCHEMATIC DIAGRAM MODEL RF-081**



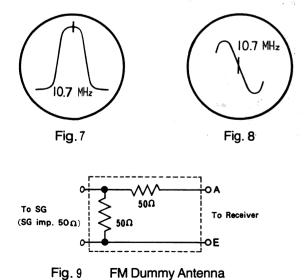
## **CIRCUIT BOARD WIRING VIEW MODEL RF-081**

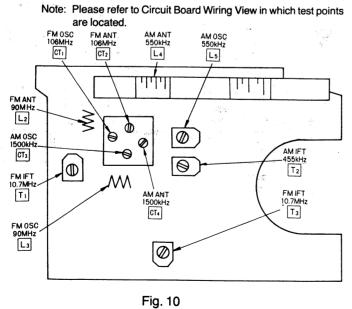


## **ALIGNMENTS**

#### **■ ALIGNMENTS INSTRUCTION**

		READ CA	REFULLY BEFO	RE ATTEMPTING	ALIGNMENT		
	Set volume control t     Set tone switch to h     Set band switch to A	o maximum.	4. S 5. C	Set power source voltage Dutput of signal generate obtain an output readi	e to 6 volts DC.	than necessary	
	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS	
	CONNECTIONS	FREQUENCY	[DISTANCE]				
			AM AL	IGNMENT			
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mode. with 400 Hz.	Point of non- interference. (on/about 600 kHz)	Output meter across speaker voice coil.	T2 (1st IFT)	Adjust for maximum output.	
(2)	"	550 kHz	550 kHz [5.5mm ( <sup>7</sup> / <sub>32</sub> '')]	"	L5 (OSC Coil) (*1) L4 (ANT Coil)	Adjust for maximum output. Adjust L4 by moving coil bobbin along ferrite core.	
(3)	#	1500 kHz	1500 kHz [50.3mm (1 <sup>31</sup> / <sub>32</sub> ")]	"	CT3 (OSC Trimmer) CT4 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).	
	(*1) Cement antenn	a bobbin with wax a	fter completing alignn	nent.			
			FM-IF A	LIGNMENT			
(4)	Connect to test point ▼ through 0.001 µF. Negative side to test point ▼.	10.7 MHz (400 kHz SWP.)	Point of non- interference. (on/about 90 MHz).	Connect vert. amp. of scope to test point . Negative side to test point .	T1 (1st FM IFT) (Primary)	Adjust for maximum amplitude. (Refer to fig. 7).	
(5)	"	" -	"	"	T3 (2nd FM IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 8).	
			FM-RF A	LIGNMENT			
(6)	Connect to test point through FM dummy antenna. Negative side to test point . (Refer to fig. 9).	90 MHz	90 MHz [6.8mm (1/4'')]	Output meter across speaker voice coil.	L3 (FM OSC Coil) L2 (FM ANT Coil)	Adjust for maximum output.	
(7)	"	106 MHz	106 MHz [47mm (1 <sup>27/</sup> 32'')]	# # # # # # # # # # # # # # # # # # #	CT1 (FM OSC Trimmer) CT2 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).	





## PARTS LOCATION

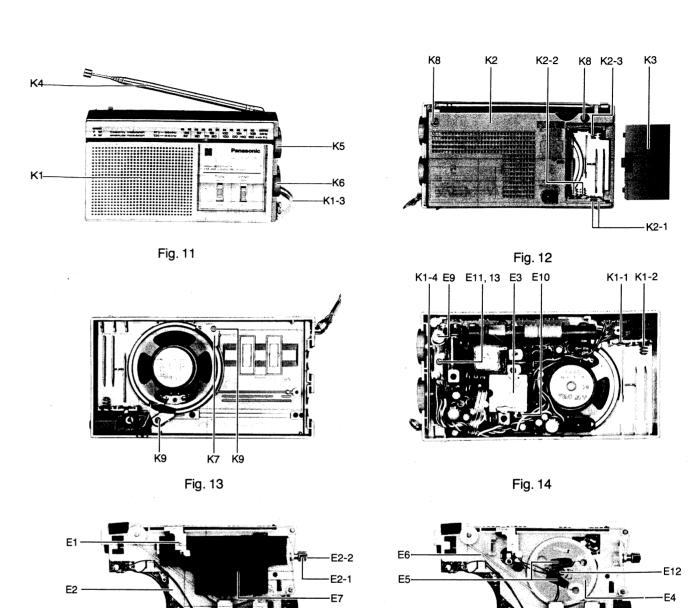


Fig. 16

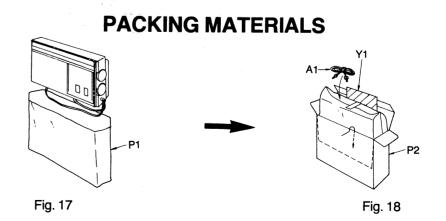


Fig. 15

## ■ REPLACEMENT PARTS LIST·······Model RF-081 (RD8102-1843C)

NOTES: 1. ∆ indicates that only parts specified by the manufacturer be used for safety.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODE		
IC2	AN7213 AN7220A RVILA4140	IC IC IC	1 1 1	
Q1 Q2	2SC1359B 2SK104F	Transistor (Si) Transistor (Si)	1	S S
Q3,5 Q4	2SC1684S 2SA722-S MA161	Transistor (Si) Transistor (Ge) Diode (Si)	2 1 1	S S S
		COILS AND TRANSFORMERS		
L2 L3 L4 L5 T1,3	RLD4Y44 RLD4Y43 RLF2V65 RLO2M3 RLI4M101 RLI2M213	Tuning Coil, FM Oscillator Coil, FM Antenna Coil, AM Oscillator Coil, AM IFT, FM IFT, AM	1 1 1 2 1	S
-		VARIABLE RESISTOR		
VRl	RVV54A140	Variable Resistor, w/ON-OFF Switch	1	
		VARIABLE CAPACITOR		
VC1∿4	RCV4LC4VN	Tuning Capacitor, w/Trimmer Capacitor (CTl∿4)	1	
		CERAMIC FILTERS	1	
CF1 CF2	RVF107MFZ RVFCFM2455D	Ceramic Filter	1	
		COMPONENT COMBINATION		
Z1	RXABPWB5	Component Combination	1	
	EAS65P88SA	SPEAKER Speaker, 6.5cm $(2-1/2")$ , $8\Omega$	1	
		SWITCH		
S1,2	RSS2A16Z	Switch, Band, Tone	2	
	7.771.0.47	JACKS Jack, DC IN	+	
J1 J2	RJJ104Z RJJ19Y	" Earphone	ī	
		RESISTORS (Value is in OHMS)		-
R7,17,28 R25	ERD25FJ470 ERD25FJ330	47 1/4W Ceramic 33 "	3	S S

Γ			<del></del>	
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R1,18	ERD25FJ101	100 1/4W Ceramic	2	S
R14	ERD25FJ221	220 " "	l ī l	S
,	ERD25FJ331	330 " "	1	S
R4,22	ERD25FJ471	470 " "	2	S
	ERD25FJ681	680 " "	ī	S
R6	ERD25FJ102	1 k " "	1	S
R12	ERD25FJ152	1.5 k " "	î	S
	ERD25FJ132 ERD25FJ222	2.2 k " "	1	S
	ERD25F3222 ERD25FJ332	3.3 k " "	3	S
	ERD25FJ183	18 k " "	ı	S
R16	ERD25FJ562	5.6 k " "	ı	S
	ERD25FJ153	15 k " "	1 1	S
R11	ERD25FJ473	47 k " "	2	S S
R3,20		56 k " "	1	S
R8	ERD25FJ563		1	S
R9	ERD25TJ154	150 k " "	1 1	S
R5	ERD25TJ564	560 k " "		100
R24	ERD25FJ123	1Z K	1	S
R23	ERD25FJ223	22 k " "	1	S
		GIPIGIMORG (II-1		
		CAPACITORS (Value is in MICRO	ł	
05 01	DOOD 1 110 7 0 DO	FARADS except P.P=PICO FARADS)	-	
C5,21	ECCD1H070DC	7 P 50V Ceramic	2	
C3,6	ECCD1H180KC	10 P	2	
C7	ECCD1H220KC	22 P	1	
C16	ECCD1H181K	180 P " "	1	
C2,4,8,29		0.001 "	5	
	ECKD1H102MD	0.001 " "		
C31	ECKD1H222MD	0.0022	1	
	ECKD1H103ZF	0.01 " "	3	
C10,19,35		0 01 0577 0	4	
	ECFVD103MD	0.01 25V Semi-Conductor	1 -	
C12,23	ECFVD153MD	0.015 " "	2	
C13,17,18		0.022 " "	_	
	ECFVD223MD	0.022	5	
C24,42	ECFVD333MD	0.033	2	
C40	ECFVD473MD	0.047 " "	1	
C20,32,33		47 107 71		_
	ECEA1AS470	47 10V Electrolytic	1	S S
C36	ECEA1AS101	100	2	5
C37,38	ECEA0JS471	4/0 0.30		
C43,44	ECEA1HS100	10 200	2	S
C22	ECEA25Z4R7	4./ 250	1	S
C27, 28,34	ECEA50ZR1	0.1 500	3 2	S
C11,30	ECEA50Z2R2	2.2 " "	2	S
		CARTHER DADEC	ļ	
77.1	DVMEOGIVCO	CABINET PARTS Front Cabinet Assembly	1	
K1	RYMF081XG8		1	
K1-1	RJC364Z	Terminal, Battery + Side	li	
K1-2	RJC719Z	Spring, Battery - Side	ī	
K1-3	RKH96Z7	Hand Strap	1	s
K1-4	XUC2FT	Circlip, Hand Strap	1	
K2	RYFF081XG7	Rear Cabinet Assembly	2	
K2-1	RJC364Z	Terminal, Battery + Side	2	1
K2-2	RJC719Z	Spring, Battery - Side	1	1
K2-3	RJC930Y	Terminal, Battery +, - Side	1	
<b> </b> K3	RYNF081X7	Battery Cover Assembly	1	
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Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	
<4	XEARK110FAK	Telescopic Antenna	1		
K5	RBN480Y	Knob, Tuning	1 1		
<b>K</b> 6	RBN558Z	Knob, Volume	1 1		
<b></b>	RMS12B	Bracket, Speaker	2		
X8	XTN26+12CFC	Screw, Cabinet M'tg	2		
κ9	XTN26+8C	" Speaker M'tg	2		
		ELECTRICAL PARTS	1		
E1	RZPFU5N	Pointer Assembly	1 1		
52	RZAFU5N	Dial Chassis Assembly	î		
E2-1	RDX187X	Shaft, Tuning Circlip, Tuning Shaft	ī	s	
E2-2	XUC12FT		1		
E3	RMC748Z	Shield Cover, Circuit Board	1		
E4	RDD368Z	Drum, Dial	2		
E5	RDS3060A	Spring, Dial	1		
<b>Ξ</b> 6	RDZ05A1	Cord, Dial	ROLL		
E <b>7</b>	RMZ158Z	Dial Back Plate	1		
E8	RBD136Z	Knob, Tone, Band	2		
E9	RJT514Z	Terminal, Telescopic Antenna	1		
E10	RMC506Z	Shield Cover, IC2	1		
E11	XTN26+12B	Screw, Chassis M'tg	1	S	
E12	XSN17+4	Screw, Drum M'tg	1	S	
E13	XWG23X6	Washer, Chassis M'tg	1	S	
	VPULATE D	ACCESSORY Magnetic Earphone	1	S	
Al	XEH1A1-P	-			
		PACKING MATERIALS	+-		
P1	RPH366Z	Soft Cover	1 1		
P2	RPK1107Z	Gift Box			
		PRINTED MATERIAL			
Yl	RQX6702Z	Instruction Book	1		
ı					
<b>\</b>	(				

# Service Manual

Supplement FM/AM 2 BAND PORTABLE RADIO

RF-081

Please use this manual together with the service manual for model No. RF-081, order No. RD8102-1843C.

### **CHANGES**

#### **REPLACEMENT PARTS LIST**

Ref. No.	Change of Part No.		Description	Per	Remarks
	RF-081 <b>→</b> (RD8102-1843C)	RF-081 (RD82011973S2)	Description	Set	
K1	RYMF081XG8	RYMF081XG	Front Cabinet Ass'y (Black)	1	
K1-3	RKH96Z7	RKH96Z	Hand Strap (Black)	1	
K2	RYFF081XG7	RYFF081XG	Rear Cabinet Ass'y (Black)	1	
КЗ	RYNF081X7	RYNFU5N	Battery Cover Ass'y (Black)	1	
K5	RBN480Y	RBN480Y1	Knob, Tuning (Black)	1	
K6	RBN558Z	RBN558Z1	Knob, Volume (Black)	1	